

WHAT IS CLAIMED IS:

1. An isolated nucleic acid sequence comprising a cancer specific transcriptional regulatory element (TRE) derived from the sequence upstream of the translational start codon for a *FEN1* gene, wherein said TRE is specific for cancer cells.

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2. The isolated nucleic acid sequence according to Claim 1, wherein said cancer cells are colon cancer cells.

10 3. The isolated nucleic acid sequence according to Claim 1, wherein said TRE is a human TRE.

4. The isolated nucleic acid sequence according to Claim 2, wherein said TRE is the *FEN1* TRE presented as SEQ ID NO:1.

15 5. The isolated nucleic acid sequence according to Claim 4, wherein said TRE is a functional fragment of the *FEN1* TRE presented as SEQ ID NO:1.

20 6. A replication competent adenovirus vector comprising a cancer specific transcriptional regulatory element (TRE) derived from the sequence upstream of the translational start codon for a *FEN1* gene, wherein said adenovirus vector selectively replicates in cancer cells.

7. A replication competent adenovirus vector according to Claim 6, wherein said TRE is the *FEN1* TRE presented as SEQ ID NO:1.

25 8. The adenovirus vector according to claim 7, wherein said adenovirus vector has a first adenovirus gene essential for replication under transcriptional control of said *FEN1* TRE.

30 9. The adenovirus vector according to claim 8, wherein said first adenovirus gene essential for replication is an early gene selected from the group consisting of E1a, E1b and E4.

10. The adenovirus vector according to claim 9, wherein the adenoviral vector comprises first and second adenoviral genes co-transcribed under transcriptional control of said *FEN1* TRE.

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11. The adenovirus vector according to claim 10, further comprising an IRES.

12. The adenovirus vector according to claim 10, further comprising a self-processing cleavage sequence.

13. The adenovirus vector according to claim 9, further comprising a transgene.

5 14. The adenovirus vector according to claim 9, further comprising a second adenovirus gene essential for replication under transcriptional control of a colon cancer specific PRL-3 TRE.

10 15. The adenovirus vector according to claim 14, wherein said second adenovirus gene essential for replication is an early gene selected from the group consisting of E1a, E1b and E4.

15 16. The adenovirus vector according to claim 9, further comprising a second adenovirus gene essential for replication under transcriptional control of a TERT-TRE or an E2F-TRE.

17. The adenovirus vector according to claim 16, wherein said second adenovirus gene essential for replication is an early gene selected from the group consisting of E1a, E1b and E4

20 18. An isolated host cell comprising the adenovirus vector of claim 4.

19. An isolated host cell comprising the adenovirus vector of claim 9.

25 20. An isolated host cell comprising the adenovirus vector of claim 15.

21. An isolated host cell comprising the adenovirus vector of claim 17.

22. A composition comprising the adenovirus vector of claim 4 and a pharmaceutically acceptable excipient.

30 23. A composition comprising the adenovirus vector of claim 9 and a pharmaceutically acceptable excipient.

24. A composition comprising the adenovirus vector of claim 15 and a pharmaceutically acceptable excipient.

25. A composition comprising the adenovirus vector of claim 17 and a pharmaceutically acceptable excipient.

26. The adenovirus vector according to claim 13, wherein the transgene is cytotoxic.

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27. The adenovirus vector according to claim 13, wherein the transgene is a cytokine.

28. The adenovirus vector according to claim 9, further comprising a polynucleotide encoding adenoviral death protein (ADP).

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29. An adenovirus vector according to claim 13, further comprising a polynucleotide encoding adenoviral death protein (ADP).

30. The adenovirus vector of claim 27, wherein said cytokine is GM-CSF gene.

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31. The adenovirus vector according to claim 13, wherein said transgene is under transcriptional control of a colon cancer specific PRL-3 TRE.

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32. The adenovirus vector according to claim 13, wherein said transgene is under transcriptional control of a TERT-TRE or an E2F-TRE.